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The Feasibility of the Use of Autobiographical Information as a Predictor of Early Army Attrition

by

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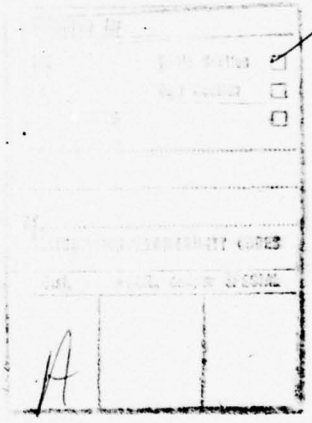

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Experimental autobiographical questionnaires were administered to samples of incoming Army enlistees at Forts Dix and Jackson. Basic Combat Training and 180-day success and attrition data were collected, and questionnaires were item analyzed using attrition criterion. Subject to verification, scoring systems developed and score validities indicate that the use of standardized autobiographical questions would be reasonably successful in predicting 180-day Army attrition. Results were similar for both black and white subgroups.

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PREFACE

This report describes research conducted as part of the United States Army's Quality Selection Project and directed at determining the feasibility of autobiographical information and other questionnaire usage in the early identification of Army enlistees who meet current enlistment standards, but who will not successfully complete their first 180 days of military service.

The research was conducted by Richardson, Bellows, Henry & Company, Inc. (RBH) under contract DAHC 19-75-C-0024 with the U.S. Army Research Institute for the Behavioral and Social Sciences. The project was conducted under the direction of Mr. Frank W. Erwin and Dr. James W. Herring of RBH, with Dr. M. A. Fischl of ARI serving as contracting officer's technical representative (COTR). Dr. William A. Owens of the University of Georgia played a major role in the development of the principal autobiographical information instrument utilized.

Special appreciation is expressed to personnel at Forts Jackson and Dix who coordinated the administration of the experimental instruments and the collection of Basic Combat Training (BCT) performance data.

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ABSTRACT

Problem-Objectives

This report describes research into the feasibility of autobiographical information and other questionnaire usage in the early identification of individuals who will (versus those who will not) successfully complete their first 180 days of Army service.

Procedures

Four experimental questionnaires were administered during April, May and June 1975 to incoming enlistees at the Forts Dix and Jackson Reception Stations, and at selected District Recruiting Commands and Armed Forces Examining and Entrance Stations. Since most questionnaires were not administered simultaneously at Fort Jackson Reception Station, sample sizes and composition varied for each questionnaire. The actual number of trainees taking each questionnaire and on whom performance data were available ranged from 2,197 to 2,269. Drill Sergeant ratings, peer ratings, discharge and other performance data were collected immediately prior to individual BCT unit completion dates. The 180-day attrition data were secured from Pentagon records.

On receipt of all questionnaire and discharge data, questionnaire results were analyzed to identify questionnaire items or scores which differentiated between those who successfully completed 180 days of service and those who did not. Results were subjected to refined and rigorous double cross-validation procedures to provide sounder estimates of the stability of the findings.

Results

Questionnaire scores of enlistees discharged before completion of BCT were similar to the scores of those enlistees discharged after BCT, but before completion of 180 days of service.

Enlistees discharged before completing 180 days of Army service answered approximately two-thirds of the questions contained in the experimental Early Experience Questionnaire and the Enlistee Profile differently from enlistees who completed 180 days of service.

Black and white subgroups show very similar results in terms of item response patterns, average scores, and the relationship of those scores to 180-day discharge.

If future groups of enlistees resemble the sample studied here in terms of characteristics measured by these questionnaires, then 180-day attrition is reasonably predictable through the use of standardized autobiographical questions.

Utilization-Recommendations

The effectiveness of this instrument type and the scoring systems developed in this study should be verified. A new autobiographical questionnaire should be constructed to include items keyed in this study and additional items suggested by results of a factor analysis of this project's scored items.

This questionnaire should be administered to a substantial sample of new enlistees who should be tracked during their first 180 days of service. Questionnaire scores then should be correlated with attrition outcomes.

If the recommended verification research yields results comparable to or exceeding those observed in this study, sufficient evidence exists to warrant consideration of the resulting measurement tool as a pre-enlistment screening device, or a post-enlistment early warning device, or a combination of both strategies.

THE FEASIBILITY OF THE USE OF AUTOBIOGRAPHICAL INFORMATION AS A PREDICTOR OF EARLY ARMY ATTRITION

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INTRODUCTION

In 1973, the military services shifted from a conscription (draft) system to one which was to rely on the enlistment of volunteers only. As a consequence, an adequate flow of manpower into the services was no longer assured. In addition, there is, an emerging focus on personnel attrition. Under the Army's present Training and Doctrine Command (TRADOC) 635-1 separation regulations, eight to ten percent of all incoming enlistees are discharged during Basic Combat Training due to their inability to adapt to Army life. Another eight to ten percent are separated prior to completing their first six months of military service. Given the size of the total population, the direct costs to the Army of such attrition rates are substantial.

The research project described herein was initiated in the context of the Army's focus on personnel attrition and is part of an effort to explore the possibility of reducing that attrition and its substantial costs through the use of new selection procedures.

REPORT OBJECTIVES

The purpose of this report is to describe the results of research into the feasibility of the use of autobiographical and other self-descriptive information in the early identification of enlistees who meet current enlistment standards, but who fail to successfully complete the first six months of military service and are discharged due to failure to adapt to Army life.

The report itself contains descriptions of (1) the measurement instruments used, (2) enlistee performance data developed, (3) enlistee samples on whom questionnaire and performance data were collected, (4) analyses of questionnaire and performance data, and (5) results obtained. Recommendations for further investigation of this measurement approach also are included.

QUESTIONNAIRES

The four questionnaires administered to enlistees in this research were the following:

Enlistee Profile (EP)

A 67-item, untimed autobiographical information questionnaire was constructed specifically for this project. Item content was based largely upon findings of similar research into the use of such information in predicting turnover, absenteeism and drop-out and could be categorized into the following general coverage areas:

- High school experiences-perceptions-achievement-participation
- Self image
- Social style - preferences - participation
- Disciplinary problem history
- Work history
- Perception of Army life, including parental attitudes - ties to home

Early Experience Questionnaire (EEQ) Form B, PT5082a.

This 36-item, untimed autobiographical information questionnaire was developed and tested in previous ARI research. While EEQ and EP general coverage areas were similar, many of the individual items, in content and/or form, were not.

What's Your Opinion (WYO)

This 6-item, untimed questionnaire was developed by ARI in earlier research. Each item elicited a level of agreement or disagreement with a specific statement relating to authority and/or discipline.

Work Environment Preference Schedule (WEPS)

This 24-item, untimed questionnaire is commercially available from the Psychological Corporation and was designed to identify individuals most likely to function successfully in large bureaucratic organizations. The examinee's task is to express a level of agreement or disagreement in response to specific statements.

ENLISTEE PERFORMANCE DATA

BCT Attrition-Performance Data

As noted, the principal objective of the research study was to determine feasibility of using autobiographical information to predict 180-day Army attrition. However, recognition was necessary that more than half of that attrition occurs before the end of BCT. More specifically, the feasibility also had to include a determination as to whether enlistees discharged before the end of BCT possessed the same characteristics as measured by the experimental questionnaires as those enlistees being discharged after completion of BCT, but before the end of 180 days.

In short, the use of one autobiographical information scoring system to predict 180-day attrition would be feasible only if the autobiographical characteristics of BCT dischargees were not significantly different from post-BCT dischargees.

For purposes of this project, therefore, and in addition to the collection of 180-day attrition data described below, the BCT performance of each enlistee who completed one or more of the experimental questionnaires was evaluated by drill sergeants using the Trainee Performance Evaluation Form (Appendix A). The form is a slightly modified version of an ARI form used in previous projects.

In terms of coverage, the Trainee Performance Evaluation Form is comprehensive, providing for entry of the following:

- Enlistee Identification: Name, SSN, BCT unit and post, date of entry into BCT, date of graduation or termination and the next unit and post to which assigned, if any.

- Early Promotion Recommendation: Drill sergeant recommendation (Yes-No) for early promotion (Number of enlistees actually receiving early promotions not recorded).

- Disciplinary Infractions: Number of times AWOL, number and type of other disciplinary infractions and record of any Article 15 or Court Martial received.

- BCT Completion-Separation Record: Completed BCT with class or recycled. If separated, type of separation.

- BCT Performance Ratings: Four separate judgments by drill sergeant, including extent of getting along with other enlistees, obedience to authority and two overall performance ratings - extent to which drill sergeants would want the trainee in their combat unit, and evaluation of the enlistee's overall performance as a trainee.

- Evaluator Identification: Name, grade, duty position, date form completed and signature. Race of evaluator was also called for and entered separately on the form.

Design of the form and its information made possible the derivation of a total BCT performance score ranging in value from 0 (poorest performance) to 10 (highest performance) for each enlistee. This score was accomplished be assigning a value of either "0" (undesirable rating) or "1" (desirable rating) to each of the 10 numbered questions comprising the body of the form. Individual item values then were summed to arrive at the total score for the form. The two overall ratings, each with five alternatives, also were assigned numerical values ranging from 1 (poor rating) to five (high rating) for additional statistical analyses.

180-Day Attrition Data

All separations occurring between the end of BCT and completion of 180 days were secured from Pentagon files and recorded by type. Separation types then were classified by ARI personnel to identify enlistees separated for failure to adapt as opposed to separation for other reasons, i.e., medical, hardships, etc.

DATA COLLECTION PROCEDURES

Questionnaire Data

The four experimental questionnaires were admininistered during April, May and June, 1975 to incoming male enlistees at the Fort Dix and Fort Jackson Reception Stations and at Selected District Recruiting Commands and Armed Forces Examining and Entrance Stations. Army personnel conducted all questionnaire administrations, and completed questionnaires from all sources were returned directly to ARI offices for processing.

BCT Performance Data

In order to correct any observed deficiencies, the authors visited both Fort Dix and Fort Jackson to brief those responsible for coordinating the performance data collection and to participate in initial data collection efforts.

Trainee Performance Evaluation Forms with enlistee name, unit, post, and SSN data completed were sent to the project liaison for performance data collection at the Trainee Branch of Personnel, Fort Jackson; and at the Directorate of Plans and Training, Fort Dix. They, in turn, circulated the forms to the units specified. The drill sergeant of each enlistee in the study completed the graduation/termination date and the 10-item and evaluator identification portions of the form, typically two or three days prior to the unit's graduation date. Forms were then returned to the project liaison office which entered the next unit to which each individual was assigned; verified each drill sergeant's response to Question Number 9 (separation type); and returned the forms directly to the authors.

180-Day Attrition Data

A tape containing the name, SSN, BCT post and date entered BCT of each enlistee in the study sample who completed BCT was used by Army personnel to access Military Personnel Center master personnel tapes to obtain such additional information as current pay grade, character of post-BCT separation, if any, Separation Program Number and date of separation.

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In general, the project's established data collection procedures functioned as planned. However, while virtually all of the enlistees in the Fort Dix sample had taken all three questionnaires to be item-analyzed (EP, EEQ, WYO), the opposite was true of the Fort Jackson sample. Very few of these enlistees had taken all three questionnaires. Some BCT cases (105) also were unavailable for 180-day analyses due to an inability to match incorrect social security numbers provided by some enlistees with their correct numbers in Army records. The only other operating problem encountered was the tracking necessary to secure data on enlistees who started BCT with one unit, but were recycled and assigned to another unit.

SAMPLES

The initial sample of enlistees for study was defined as all Fort Dix-Fort Jackson enlistees who had completed at least one of the experimental questionnaires, had been discharged under TRADOC 635-1 prior to completing BCT, or had completed BCT and had a complete Trainee Performance Evaluation Form available.

BCT SAMPLE

	Post Combined		Fort Dix		Fort Jackson	
	N	%	N	%	N	%
Total Sample	3,304	100.0	1,192	100.0	2,112	100.0
Separated-635-1	323	9.8	101	8.5	222	10.5
Completed BCT	2,981	90.2	1,091	91.5	1,890	89.5

The final and principal sample for study was defined as all Fort Dix-Fort Jackson enlistees who had completed at least one of the experimental questionnaires, had been discharged for a failure-to-adapt reason before completing 180 days of service, or had completed 180 days of service. The military Personnel Center provided 180-day information on 2,876 of the 2,981 enlistees who had completed BCT. Of these, two enlistees had died before serving 180 days, and 27 had been discharged prior to serving 180 days for other than failure-to-adapt reasons, i.e., medical, hardship, physical disability, etc. All 29 enlistees were removed from the final sample, described in the tables below in terms of sample totals and ethnic group and questionnaire distributions.

DATA ANALYSIS

In terms of this project's original design, the principal experimental questionnaires, the EP and EEQ, were not viewed as 67- and 36-item questionnaires, each requiring separate analysis. The EP and EEQ were seen instead simply as a total pool of 103 items which each sample member had taken and from which a new assembly of keyed items could be drawn as a result of this study. However, the fact that very few Fort Jackson sample members had taken all questionnaires, placed severe limitations on this original strategy. As a consequence, a decision was made to analyze each of the four questionnaires separately in order to benefit from the size of the much larger samples which had completed each questionnaire received.

Discharge Group Comparisons

The underlying logic in autobiographical questionnaire research and usage is that many of the questions such instruments contain will be answered much differently by various subgroups within the populations studied. In this instance, the research design and analysis called for a systematic comparison of questionnaire responses of two subgroups of Army enlistees - those who completed their first 180 days of service versus those who could not adapt and were discharged before the end of that period. Since the discharge group contained two significant subgroups (BCT and post-BCT dischargees), however, an analysis was required first to determine the extent to which these two failure (discharge) groups were similar and, thus, combinable.

To make this determination, item analyses were conducted which statistically compared the EP and EEQ responses of the BCT discharge group to the responses of the post-BCT group. The results indicated virtually no differences between the two failure groups' responses. Compared to the BCT dischargees, the post-BCT dischargees did indicate a higher level of involvement in physical-athletic activities during school years and a more optimistic view of their likelihood of adapting to Army life. The overall conclusion, however, was that the two discharge subgroups were essentially similar in terms of the characteristics measured by the EP and EEQ. The BCT dischargees and post-BCT dischargees therefore reasonably could be combined into one 180-day failure group for purposes of further analysis.

Item Analysis-Scoring Key Development

Having verified the similarity and combinability of the two discharge subgroups, the next analysis step involved comparing each questionnaire's responses to the two-value 180-day separated/not separated variable.

180-DAY SAMPLE TOTALS

	Post Combined N	Post Combined %	Fort Dix N	Fort Dix %	Fort Jackson N	Fort Jackson %
Total Sample	3,170	100.0	1,138	100.0	2,032	100.0
Separated Before 180 Days Due to Failure to Adapt (BCT and Post-BCT)	515	16.2	187	16.4	328	16.1
Completed 180 Days	2,655	83.8	951	83.6	1,704	83.9

180-DAY SAMPLE-ETHNIC GROUP COMPOSITION

Separation/Completion Percentages Within Each Sample

	Total Sample N	Total Sample %	White N	White %	Black N	Black %	Other Ethnic N	Other Ethnic %
Total Sample	3,170	100.0	2,045	100.0	844	100.0	281	100.0
Separated	515	16.2	360	17.6	108	12.8	47	16.7
Completed	2,655	83.8	1,685	82.4	736	87.2	234	83.3

Subgroup Percentages of Total Samples

	Total Sample N	Total Sample %	White N	White %	Black N	Black %	Other Ethnic N	Other Ethnic %
Total Sample	3,170	100.0	2,045	64.5	844	26.6	281	8.9
Separated	515	100.0	360	69.9	108	21.0	47	9.1
Completed	2,655	100.0	1,685	63.5	736	27.7	234	8.8

180-DAY SAMPLE-QUESTIONNAIRE DISTRIBUTIONS

Questionnaire	Total Sample N	White N	Black N	Other N
EP	2,112	1,319	569	224
EEQ	2,182	1,478	548	156
WYO	2,107	1,426	526	155
WEPS	977	666	249	62

The computer program used in all item analyses conducted in this study supplied the various descriptive statistics for all of the individual items, including frequency and percentage of responses by criterion category and mean criterion values for each alternative. For each item alternative, the program computed point biserial correlations. The criterion variable (categorized as separated/not separated) was correlated with the predictor variable (categorized as responses to a given item alternative/responses to any other alternative of the same item). The program also computed Pearson product-moment correlations used only for those items whose alternatives constitued a continuum.

In spite of the substantial size of the samples taking each questionnaire, estimating prediction shrinkage on cross-validation was of major concern. Therefore, a complex sample splitting strategy was employed. Essentially, two half-sample double cross-validation procedures were followed in addition to the construction and foldback validation of various total sample scoring keys for the EP and EEQ. Briefly summarized, the sample splitting procedure consisted of dividing the total sample for each questionnaire into two sets of random halves, stratified as representative of post, 180-day status categories and ethnic group. Appendix B contains a detailed description of the stratification process.

ITEM ANALYSIS SAMPLES

Sample	EP N	EEQ N
180-Day Sample - Stratified Random Half 1	1,056	1,091
180-Day Sample - Stratified Random Half 2	1,056	1,091
180-Day Sample - Stratified Random Half 3	1,054	1,090
180-Day Sample - Stratified Random Half 4	1,058	1,092

Halves 1 and 2 are comparable in terms of their proportion of sample members of each major ethnic group (white, black, other) within post and within 180-day status category, but their members are otherwise randomly represented. Further, halves 1 and 2 do not contain any common sample members.

Halves 3 and 4 are comparable in the same manner as halves 1 and 2, in terms of their ethnic group, post and 180-day status category. They also do not contain any common sample members. Half 3 contains 50 percent of half 1's members and 50 percent of half 2's members. Half 4 contains the other 50 percent of half 1's members and the other 50 percent of half 2's members.

For both EP and EEQ, five separate item analysis outputs were produced, one for each of the four half-samples and one for the total sample. Nine new scoring keys were developed for each of the questionnaires - one each for the four stratified random halves, three keys based on various combinations of stratified random half data and two keys constructed directly from an item analysis of the total sample.* The scoring procedure utilized called for assigning weights to item alternatives if the item showed a significant relationship to the two-value criterion. The weights were assigned using various rules as described below.

Halves 1, 2, 3 and 4 Keys

For every half-sample, each item's statistics were inspected to determine its degree of relationship to the criterion. For an item whose alternatives formed a continuum, the overall item correlation (product moment) with the criterion was the most useful. All other statistics helped describe response differences by criterion group. For an item whose alternatives did not form a continuum, the point biserial correlation for each item alternative was the most useful. Alternatives of items showing significant relationships to the criterion were given values of 0 or 1 if the significance level of the item was at least .05. Values of 0-1-2 were assigned if the significance level of the item was at least .01. For example, for EP Half 1, question number 1 was assigned values because it showed an overall relationship to the criterion beyond the .01 level of significance. More likely to be found in the dischargee group were 17- or younger, and 18 year-olds. The 19 year-olds showed no difference, and 20-, 21- and 22 year or older enlistees were more likely found in the non-dischargee group.

SAMPLE KEYED ITEM - EP HALF 1

1. How old are you?	Assigned Weight
( ) 17 or younger	0
( ) 18	0
( ) 19	1
( ) 20	2
( ) 21	2
( ) 22 or older	2

* Since the WYO items showed essentially no relationship to the 180-day criterion, no keys were obtainable for this instrument.

Each item in each item analysis qualifying for weights was assigned them according to the scheme just described. For each half-sample, therefore, one total score could be developed simply by adding the values of all items which received weights, or scores.

Halves 1-2 and 3-4 Keys

For each questionnaire, halves 1 and 2 were reviewed simultaneously to identify those item alternatives significantly related to the two-value criterion in both halves. The purpose of this procedure was to identify items with comparable item statistics in each half, and to develop a set of item scores only for items showing such consistent results. This procedure, especially critical with samples smaller than those available here, is designed to reduce the tendency to capitalize on error (largely due to the unique characteristics of the sample at hand) in constructing scoring keys designed for future prediction purposes. For these "composite" keys, item values were assigned according to the following scheme.

Significance Level In One Random Half	Significance Level In Other Random Half	Maximum Item Weight Assigned
At least .05	At least .05	1
At least .01	At least .01	2
At least .001	At least .001	4

Using this procedure, fifth and sixth keys were developed for each questionnaire, one for halves 1-2 and one for halves 3-4. This procedure served to eliminate some items significantly related to the criterion in one half only and to give a higher value to items showing very strong relationships to the criterion in each half.

Composite Keys - Halves 1-2-3-4

The seventh keys constructed for the EP and EEQ questionnaires were developed by simultaneously reviewing each questionnaire's four halves. This most conservative of keying procedures, again designed to reduce error, required an item to be significant in all four halves in order to qualify for a value assignment and entry into a key. The number of halves (4) and the number of significance levels affecting weighting decisions (3) created a number of item significance level permutations. Even so, the keying procedure utilized for these composite four-half keys was undertaken in the context of the following general weighting scheme.

Significance Level Pattern	Maximum Weight Assigned to Item
.05 in all four halves	1
.01 in all four halves	2
.001 in all four halves	4

Total Sample Keys

Two final keys - numbers eight and nine - were constructed as part of this research and developed using the item analysis computed for each questionnaire's total sample. Given the significant size of the total samples, it was expected that keys developed from the total samples would not experience appreciable shrinkage due to error and would have the benefit of using all available data in one item analysis.

Of the two keys, the eighth was developed according to the following weighting scheme.

Significance Level of Item	Maximum Weight Assigned
At Least .05	1
At Least .01	2
At Least .001	4

The ninth key was developed by assigning a maximum value of 1 (2 for items requiring a neutral value for a given alternative) to the same items keyed in the eighth key described above. This ninth key recognized an item that showed a significant relationship to the criterion, but did not assign a value reflecting the strength of that relationship. The existing literature on key development suggests that unit weight keys reduce error and are more resistant to significant declines in prediction level in future use.

In summary, then, the key development procedure was an exceptionally conservative one, designed to reduce error to the fullest extent possible.

Questionnaire Scoring

Immediately following the item analysis-key development procedure described above, all keys were used to score all questionnaires for all sample members. Each of the nine developed Enlistee Profile keys, for example, was used to score the EP of every sample member who had taken it. Thereby, nine separate EP scores were produced for each of the sample members. The same procedure was repeated with EEQ keys (the nine developed keys plus the one pre-existing ARI key). Thereby, 10 separate scores were produced for each sample member who had taken that instrument. Those who had taken the WYO and/or the WEPS had one score for each of these instruments, the WYO score from the pre-existing ARI key and the WEPS score from the publisher's pre-existing key.

Correlational Analysis

Having scored all sample members' questionnaires, descriptive statistics and correlation matrices were computed using selected variables, including various BCT and 180-day performance variables and scores for all four questionnaires. Correlational analysis samples included EP half samples, EEQ half samples, White enlistees, Black enlistees and the total samples.

RESULTS

The tables which follow present the results of the correlational analyses, as well as selected, related data.

I Enlistee Profile Scores - 180-Day Separated/Not Separated Correlations.

II Enlistee Profile Scores - Black/White Enlistee Comparisons.

III Early Experience Questionnaire Scores - 180-Day Separated/Not Separated Correlations.

IV Early Experience Questionnaire Scores - Black/White Enlistee Comparisons.

V WYO-WEPS Scores - 180-Day Separated/Not Separated Correlations.

VI Enlistee Group Comparisons - 180-Day Separated vs. Not Separated.

I

EP SCORES - 180-DAY SEPARATED/NOT SEPARATED CORRELATIONS

180-Day EP Key	Analysis Samples: Half 1 (N=1,056) r_b	Half 2 (N=1,056) r_b	Half 3 (N=1,054) r_b	Half 4 (N=1,058) r_b	Total EP (N=2,112) r_b
Half 1	.47	.30[1]	.36	.41	.39
Half 2	.35[1]	.50	.36	.47	.42
Half 3	.45	.38	.45	.38[1]	.42
Half 4	.42	.41	.33[1]	.50	.41
Halves 1-2	.44	.39	.38	.47	.42
Halves 3-4	.45	.41	.41	.45	.44
Halves 1-2-3-4	.44[2]	.41[2]	.41[2]	.45[2]	.42[2]
Total Sample- Differential Weights	.42	.41	.38	.47	.42
Total Sample- Unit Weights	.44	.41	.39	.45	.42

1 Correlations describing the preliminary cross-validation results.

2 Correlations describing the principal final validation results.

II

EP SCORES - BLACK/WHITE ENLISTEE COMPARISONS

180-Day EP Key	White Subgroup (N-1,319) M	SD	180-Day Separated/ Not Separated r_b	Black Subgroup (N=569) M	SD	180-Day Separated/ Not Separated r_b
Half 1	39.72	9.50	.39	40.69	7.91	.44
Half 2	38.82	7.79	.42	38.92	6.69	.47
Half 3	26.81	7.21	.44	27.61	6.12	.44
Half 4	40.49	9.68	.42	41.05	7.95	.47
Halves 1-2	27.39	8.47	.44	28.93	7.13	.45
Halves 3-4	27.22	8.17	.44	28.85	6.52	.47
Halves 1-2-3-4	30.08	9.14	.44	31.84	7.38	.45
Total Sample-Differential Weights	80.31	18.11	.44	82.04	14.79	.47
Total Sample-Unit Weights	35.10	7.11	.44	35.71	5.80	.47

III

EEQ SCORES - 180-DAY SEPARATED/NOT SEPARATED CORRELATIONS

180-Day EEQ Key	Analysis Samples: Half 1 (N=1,091) r_b	Half 2 (N=1,091) r_b	Half 3 (N=1,090) r_b	Half 4 (N=1,092) r_b	Total EEQ (N=2,182) r_b
Half 1	.39	.32[1]	.35	.35	.34
Half 2	.26[1]	.36	.29	.33	.30
Half 3	.33	.32	.35	.30[1]	.33
Half 4	.30	.36	.26[1]	.39	.33
Halves 1-2	.36	.35	.32	.39	.36
Halves 3-4	.33	.35	.30	.36	.33
Halves 1-2-3-4	.35[2]	.35[2]	.32[2]	.39[2]	.34[2]
Total Sample-Differential Wts.	.33	.36	.33	.36	.34
Total Sample-Unit Weights	.30	.35	.32	.32	.32
Existing Key	xx	xx	xx	xx	.24

1 Correlations describing the preliminary cross-validation results.

2 Correlations describing the principal final validation results.

IV

EEQ SCORES - BLACK/WHITE ENLISTEE COMPARISONS

180-Day EEQ Key	White Subgroup (N=1,478) M	SD	180-Day Separated/ Not Separated r_b	Black Subgroup (N=548) M	SD	180-Day Separated/ Not Separated r_b
Half 1	15.45	3.52	.39	15.71	3.01	.27
Half 2	18.75	5.93	.33	19.68	4.90	.27
Half 3	15.45	4.43	.36	16.07	3.78	.27
Half 4	14.45	4.39	.36	15.05	3.68	.29
Halves 1-2	14.61	4.66	.39	15.10	3.87	.30
Halves 3-4	15.60	5.51	.38	15.81	4.73	.27
Halves 1-2-3-4	17.14	5.71	.38	17.82	4.68	.30
Total Sample-Differential Weights	35.25	9.39	.38	36.85	7.46	.29
Total Sample-Unit Weights	18.37	4.39	.36	18.88	3.58	.27
Existing Key	30.23	3.25	.29	30.45	2.89	.18

(24)

V

WYO-WEPS SCORES - 180-DAY SEPARATED/NOT SEPARATED CORRELATIONS

Variable	Analysis Samples: Total Sample N	r_b	White Subgroup N	r_b	Black Subgroup N	r_b
WYO Total Score	2,107	.04	1,426	.03	526	.06
WEPS Total Score	977	.02	666	-.06	249	.06

(25)

VI

ENLISTEE GROUP COMPARISONS-180-DAY SEPARATED VS. NOT-SEPARATED

Variable	All Dischargees N	M	SD	Enlistees Completing 180 Days N	M	SD	t
EP Key-Halves 1-2-3-4	350	25.19	8.38	1,762	31.68	8.20	13.47*
EP Key-Total Sample Differential Wts.	350	70.05	16.90	1,762	82.85	16.22	13.38*
EP Key-Total Sample Unit Weights	350	31.04	6.76	1,762	36.09	6.36	13.42*
EEQ Key-Halves 1-2-3-4	351	14.44	5.75	1,831	17.89	5.20	11.18*
EEQ Key-Total Sample Differential Wts.	351	31.22	9.25	1,831	36.68	8.56	10.80*
EEQ Key-Total Sample Unit Weights	351	16.53	4.33	1,831	18.96	4.02	10.24*
EEQ-Existing Key	351	29.17	3.56	1,831	30.55	2.98	7.68*
AFQT Percentile Score	515	49.09	17.42	2,649	55.42	19.84	6.75*
WEPS Total Score	144	38.17	7.06	833	37.91	7.07	-.41 NS
WYO Total Score	337	2.35	1.48	1,770	2.45	1.43	1.17 NS

NS = Not significant ($p > .05$)
* $p < .001$

40

DISCUSSION-CONCLUSION

As indicated at the outset, this research project was initiated in the context of the Army's focus on early attrition among enlisted personnel. This study is part of an effort to explore the possibility of reducing that attrition and its substantial costs through use of new selection procedures. In brief, the findings of this feasibility study include the following highlights.

- As measured by item responses and scores on the EP and EEQ, enlistees discharged before the end of BCT are very similar to enlistees who complete BCT, but are discharged before the end of 180 days.

- In terms of the principal autobiographical instruments, the EP and EEQ, enlistees who were discharged prior to completing 180 days of service answered approximately two-thirds of the questions in the two forms in a pattern significantly different from enlistees who completed 180 days. The WYO and WEPS questionnaires, as currently scored, show little, if any, ability to differentiate discharged from not-discharged enlistees. In addition, there is no possibility of developing a new scoring system for the WYO to accomplish such differentiation.

- White and Black enlistees show very similar results in terms of EP and EEQ item response patterns. No significant differences were shown in EP and EEQ score means and EP and EEQ score relationships to 180-day attrition. No other ethnic group was of sufficient size for separate analysis.

In summary, if future groups of enlistees resemble the sample studied here in terms of characteristics measured by EP and EEQ, reasonably accurate predictions of early attrition can be made using the kind of autobiographical information collected in this study. Further, results of the sample-splitting techniques used in this project suggest that prediction shrinkage with future samples will be minimal.

RECOMMENDATIONS

Although results indicate that 180-day attrition appears predictable through use of standardized autobiographical questions, the effectiveness of this instrument type and the scoring systems developed here should be subjected to verification.

To achieve this objective, the following procedural steps are recommended.

- A new autobiographical questionnaire should be constructed to include (1) EP and EEQ items found significantly related to the discharge criterion in the current study and (2) additional items suggested by results of a factor analysis of the current study's scored EP and EEQ items to expand the content coverage of the instrument.

- This new questionnaire should be administered to a substantial sample of new enlistees who should be tracked through their first 180-days of service (or less, if discharged).

- Questionnaire scores then should be correlated with attrition outcomes. In addition, score-criterion relationships should be able to improve as a result of data from the new sample of enlistees. Significantly, the new study will avoid the present study's problem of incomplete sets of data for individual enlistees.

If this recommended verification study yields results comparable to or exceeding those observed herein, sufficient evidence will exist to warrant consideration of the resulting measurement tool as (1) a selection device to screen out potential enlistees with high discharge probabilities, or (2) an early warning device designed to permit early identification of enlistees who without some form of interference are likely to be discharged, or (3) a combination of both.

APPENDIX A

TRAINEE PERFORMANCE EVALUATION FORM - 5-75 - ARMY RESEARCH INSTITUTE

TRAINEE NAME _____ UNIT _____ POST _____

SOC. SEC. NO. _____ DATE ENTERED BCT _____ GRADUATION/TERMINATION DATE _____

NEXT UNIT TO WHICH SOLDIER BEING SHIPPED: _____

1. Was this soldier recommended for early promotion?

- ☐ Yes
- ☐ No

2. How well did he get along with others?

- ☐ Got along well with almost everybody
- ☐ OK, but had problems with some
- ☐ Got along with very few or none

3. Was he obedient to authority?

- ☐ Yes, always; without reservation
- ☐ Yes, but sometimes had to be told more than once
- ☐ Questionable; often had to be told more than once
- ☐ No, he was insubordinate

4. Would you want this soldier in your combat unit?

- ☐ Yes, he's an outstanding soldier
- ☐ Yes, he's a good soldier
- ☐ I have some doubts
- ☐ Only if no others were available
- ☐ No, not under any circumstances

5. How many times was this soldier AWOL?

- ☐ 0
- ☐ 1
- ☐ 2 or more

6. How many other disciplinary infractions did he have?

- ☐ 0 What kind?
- ☐ 1 _____
- ☐ 2 _____
- ☐ 3 or more _____

7. Did this soldier get an Article 15 or Court Martial?

- ☐ No
- ☐ Yes → What for? _____

8. Is this soldier completing BCT with his class?

- ☐ Yes
- ☐ No → Why not? _____

9. Has he been or is he being separated?

- ☐ No
- ☐ Yes, Under TRADOC 635-1
- ☐ Yes, Other adverse
- ☐ Yes, any other → Explain _____

10. In your opinion, what kind of trainee was this soldier?

- ☐ Excellent
- ☐ Geod
- ☐ Satisfactory
- ☐ Below average
- ☐ Poor

This form completed by (PLEASE *PRINT*)

11. NAME _____ **12. GRADE** _____ **13. DUTY POSITION** _____

SIGNATURE _____ **TODAY'S DATE** _____

APPENDIX B

STRATIFIED RANDOM SAMPLE CONSTRUCTION PROCEDURE

The definition of random half-samples for use in item analyzing EP and EEQ questionnaire data required the development of a sample stratification procedure designed to insure a distribution of enlistees into each of four random halves according to post, 180-day status category and ethnic/racial group in proportions approximately equal to the representation of these population subgroups in the total sample. Since the total sample included members from two posts, three 180-day status categories and three ethnic categories, the number of population subgroup cells considered in constructing each questionnaire's analysis samples was 18 (2X3X3) as follows.

SAMPLE SUBGROUP CELLS

Cell Number	Post	180-Day Status Category	Racial/Ethnic Group
1	Dix	BCT Discharge	White
2	Dix	BCT Discharge	Black
3	Dix	BCT Discharge	Other
4	Dix	Post-BCT Discharge	White
5	Dix	Post-BCT Discharge	Black
6	Dix	Post-BCT Discharge	Other
7	Dix	Served 180 Days	White
8	Dix	Served 180 Days	Black
9	Dix	Served 180 Days	Other
10	Jackson	BCT Discharge	White
11	Jackson	BCT Discharge	Black
12	Jackson	BCT Discharge	Other
13	Jackson	Post BCT-Discharge	White
14	Jackson	Post-BCT Discharge	Black
15	Jackson	Post-BCT Discharge	Other
16	Jackson	Served 180 Days	White
17	Jackson	Served 180 Days	Black
18	Jackson	Served 180 Days	Other

Having identified these cells, sample members were assigned and the half samples stratified for each questionnaire according to the following procedures.

Halves 1-2

- Enlistees were assigned to their appropriate cell according to their post, 180-day status category and racial/ethnic group and in ascending SSN within cell.
- Half 1 was then constructed by assigning to it all odd-numbered (first, third, fifth, etc.) enlistees in each odd-numbered cell and all even-numbered (second, fourth, sixth, etc.) enlistees in each even-numbered cell.

- Half 2 was constructed by assigning to it all even-numbered enlistees in each odd-numbered cell and all odd-numbered enlistees in each even-numbered cell.

Halves 3-4

- Using the same cells as described above, with enlistees in each cell arranged in ascending SSN order, Half 3 was constructed by assigning to it the first and second, fifth and sixth, ninth and tenth etc., enlistee in each odd-numbered cell and the third and fourth, seventh and eighth, etc. enlistee in each even-numbered cell.

- Half 4 was constructed by assigning to it the third and fourth, seventh and eighth, etc. enlistee in each odd-numbered cell and the first and second, fifth and sixth, etc. enlistee in each even-numbered cell.

The net result of the procedure described was four stratified random half samples for use in the item analysis of each questionnaire. The criterion for each analysis was BCT plus Post-BCT dischargees (assigned a value of "1") and served 180 days (assigned a value of "2").

APPENDIX C

EP-EEQ SCORING KEY CHARACTERISTICS - INTERCORRELATIONS

The tables which follow describe the characteristics of the EP and EEQ scoring key characteristics, as well as the interrelationships among the keys. Briefly summarized, the highlight of the information presented include the following.

- Table 1 - A significant number of EP and EEQ items contribute to most keys.
- Table 2 - EP keys are very highly intercorrelated and indicate particularly the high degree of similarity between half sample used in developing the keys.
- Table 3 - High intercorrelations also exist between EEQ keys.
- Table 4 - EP and EEQ keys also are highly intercorrelated, but not to the degree that items selected from the EEQ could not add to the predictiveness of the EP keys.

EP-EEQ KEY CHARACTERISTICS

Enlistee Profile - Total 67 Items

Key Description	No. Items Keyed	Possible Total Score Range	Possible Item Score Range
Half 1	39	0- 64	0-2
Half 2	38	0- 58	0-2
Half 3	30	0- 49	0-2
Half 4	44	0- 69	0-2
Halves 1-2	22	0- 45	0-4
Halves 3-4	23	0- 46	0-4
Halves 1-2-3-4	24	0- 50	0-4
Total Sample-Differential Wts.	43	0-124	0-4
Total Sample-Unit Weights	43	0- 54	0-2

Early Experience Questionnaire - Total 36 Items

Half 1	13	0- 21	0-2
Half 2	19	0- 32	0-2
Half 3	18	0- 25	0-2
Half 4	16	0- 23	0-2
Halves 1-2	10	0- 21	0-4
Halves 3-4	11	0- 24	0-4
Halves 1-2-3-4	10	0- 26	0-4
Total Sample-Differential Wts.	22	0- 54	0-4
Total Sample-Unit Weights	22	0- 28	0-2

EP 180-DAY KEY INTERCORRELATIONS
(N=2,112)

180-Day EP Key	M	SD		Intercorrelations (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Half 1	39.95	8.99	(1)	xx	.81	.91	.92	.90	.88	.89	.94	.94
Half 2	38.78	7.39	(2)	.81	xx	.82	.91	.88	.86	.88	.93	.90
Half 3	27.06	6.82	(3)	.91	.82	xx	.85	.89	.93	.92	.92	.91
Half 4	40.54	9.13	(4)	.92	.91	.85	xx	.90	.89	.90	.96	.94
Halves 1-2	27.81	8.03	(5)	.90	.88	.89	.90	xx	.96	.97	.94	.90
Halves 3-4	27.70	7.65	(6)	.88	.86	.93	.89	.96	xx	.99	.93	.91
Halves 1-2-3-4	30.60	8.58	(7)	.89	.88	.92	.90	.97	.99	xx	.94	.90
Total Sample-Differential Wts.	80.73	17.01	(8)	.94	.93	.92	.96	.94	.93	.94	xx	.98
Total Sample-Unit Wts.	35.25	6.69	(9)	.94	.90	.91	.94	.90	.91	.90	.98	xx

EEQ 180-DAY KEY INTERCORRELATIONS
(N=2,182)

180-Day EEQ Key	M	SD		Intercorrelations (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Half 1	15.54	3.39	(1)	xx	.78	.90	.84	.89	.85	.88	.90	.86	.62
Half 2	19.10	5.66	(2)	.78	xx	.90	.92	.84	.89	.88	.95	.94	.74
Half 3	15.70	4.29	(3)	.90	.90	xx	.87	.89	.88	.88	.94	.92	.68
Half 4	14.66	4.19	(4)	.84	.92	.87	xx	.89	.92	.93	.94	.90	.68
Halves 1-2	14.77	4.47	(5)	.89	.84	.89	.89	xx	.94	.97	.91	.83	.63
Halves 3-4	15.68	5.31	(6)	.85	.89	.88	.92	.94	xx	.97	.91	.86	.68
Halves 1-2-3-4	17.34	5.44	(7)	.88	.88	.88	.93	.97	.97	xx	.94	.86	.65
Total Sample-Differential Wts.	35.80	8.90	(8)	.90	.95	.94	.94	.91	.91	.94	xx	.96	.72
Total Sample-Unit Weights	18.57	4.17	(9)	.86	.94	.92	.90	.83	.86	.86	.96	xx	.75
Existing Key	30.30	3.13	(10)	.62	.74	.68	.68	.63	.68	.65	.72	.75	xx

SELECTED EP-EEQ 180-DAY SEPARATED/NOT SEPARATED KEY INTERCORRELATIONS

Key		Intercorrelations *							
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
180-Day EP Halves 1-2-3-4	(1)	xx	2,112	2,112	1,137	1,137	1,137	2,108	2,112
180-Day EP Differential Weights	(2)	.94	xx	2,112	1,137	1,137	1,137	2,108	2,112
180-Day EP Unit Weights	(3)	.90	.98	xx	1,137	1,137	1,137	2,108	2,112
180-Day EEQ Halves 1-2-3-4	(4)	.68	.70	.66	xx	2,182	2,182	2,177	2,182
180-Day EEQ Differential Weights	(5)	.73	.76	.73	.94	xx	2,182	2,177	2,182
180-Day EEQ Unit Weights	(6)	.75	.77	.76	.86	.96	xx	2,177	2,182
AFQT Score	(7)	.22	.24	.24	.25	.25	.26	xx	3,164
180-Day Separated/ Not Separated **	(8)	.42	.42	.42	.34	.34	.32	.18	xx

* Matrix Below Diagonal (xx) Contains Correlation Coefficients - Matrix Above Diagonal Contains Sample Sizes Corresponding To Correlation Coefficients

** All Correlations With This Variable Are Biserial

APPENDIX D

ENLISTEE GROUP COMPARISONS - BCT DISCHARGEES VS. POST-BCT DISCHARGEES

As stated in the body of this report, the two failure groups - BCT and post-BCT dischargees - were not significantly different from one another on EP and EEQ responses and could reasonably be combined to form a total 180-day discharge group for analysis purposes. As also indicated here, AFQT, WYO and WEPS total scores for the two groups are not significantly different.

	BCT Dischargees			Post-BCT Dischargees			
Variable	N	M	SD	N	M	SD	t
EP Key-Halves 1-2-3-4	212	25.15	8.56	138	25.24	8.12	.09 NS
EP Key-Total Sample-Differential Weights	212	69.48	17.43	138	70.93	16.07	.78 NS
EP Key-Total Sample-Unit Weights	212	30.68	6.99	138	31.59	6.38	1.23 NS
EEQ Key-Halves 1-2-3-4	205	14.93	5.90	146	13.76	5.48	-1.88 NS
EEQ Key-Total Sample Differential Wts.	205	31.84	9.53	146	30.34	8.79	-1.49 NS
EEQ Key-Total Sample Unit Weights	205	16.80	4.47	146	16.16	4.13	-1.36 NS
EEQ-Existing Key	205	28.98	3.83	146	29.44	3.16	1.19 NS
AFQT Score	323	48.21	16.90	192	50.57	18.21	1.49 NS
WEPS Total Score	94	38.27	6.92	50	38.00	7.37	- .22 NS
WYO Total Score	195	2.46	1.53	142	2.19	1.40	-1.65 NS

NS - Not significant ($p > .05$)

APPENDIX E

CORRELATIONS BETWEEN PEER RATINGS AND SELECTED PREDICTOR-CRITERION VARIABLES

Peer ratings have long been employed in Army research as criteria of performance for both officer and enlisted personnel. In general, they have proven effective.

During June of 1975, while they were in their latter weeks of BCT, a portion of this study's Fort Dix sample had been asked as part of another study to provide peer ratings on the other members of their BCT platoon. Participating enlistees were furnished a roster of all other enlistees in their platoon. They were instructed to mark first the name of the enlistee on the roster who they thought had the "most soldierly potential." They were instructed then to mark the name of the enlistee who they thought had the "least soldierly potential." They continued this process, selecting the next most and next least, until they had placed six enlistees in each of the two extreme categories with the remaining names constituting a middle group. Each enlistee in each participating platoon was thus rated high, middle or low by every other member of the platoon. Evaluations for each enlistee were then combined to yield a composite score. This score, or peer rating composite, was correlated with selected variables available in this study.

Highlights of the peer rating findings include the following:

- Peer rating relationships to other BCT criterion measures are moderate. The highest such correlation is with Drill Instructor ratings (expressed in terms of a total score derived from assigning weights of 0 or 1 (depending on desirability of rating) to each item on the Trainee Performance Evaluation Form and summing across all 10 items).

- Peer rating appears to be a predictable criterion using EP and EEQ scores.

- Given the small number (N = 25) and percentage (8.5%) of 180-day separations in the peer rating sample, the observed relationship between peer ratings and 180-day separations should be viewed as merely suggestive of the true relationship.

- The small number (N = 5) of BCT dischargees available in the peer rating sample precludes any statement concerning peer rating-BCT discharge relationships.

In summary, this study should not be considered a reasonable test of the relationship between peer ratings and 180-day attrition.

BCT SAMPLE

	Peer Ratings Available N	%
Total Sample	308	100.0
Separated BCT-635-1	5	1.6
Completed BCT	303	98.4

180-DAY SAMPLE

	Peer Ratings Available N	%
Total Sample	295	100.0
Separated Before 180 Days	25	8.5
Completed 180 Days	270	91.5

(12)

CORRELATIONS BETWEEN PEER RATINGS AND SELECTED PREDICTOR-CRITERION VARIABLES

Variable	Peer Ratings Total N = 308 (M = 2.02, SD = .25) N	r
BCT Trainee Perf. Evaluation Form Total Score 0-10 scale	308	.44**
BCT Trainee Perf. Evaluation Form Question No. 10 (Overall quality)	308	.36**
BCT Trainee Perf. Evaluation Form Question No. 4 (Overall preference)	308	.35**
BCT Success Index (See Appendix F)	308	.39**
AFQT Score	308	.12*
180-Day Separated/Not Separated	295	.07[1]
EP Key Halves 1-2-3-4	230	.22**
EP Key Total Sample-Differential Weights	230	.29**
EP Key Total Sample-Unit Weights	230	.28**
EEQ Key Halves 1-2-3-4	295	.17**
EEQ Key Total Sample-Differential Weights	295	.20**
EEQ Key Total Sample-Unit Weights	295	.21**

[1] Biserial Correlation
* $p < .05$
** $p < .01$

APPENDIX F

EP-EEQ-BCT SUCCESS LEVEL RELATIONSHIPS

While the purpose of this study was to establish the feasibility of autobiographical questionnaire usage in attrition prediction, another subject researched was the extent to which autobiographical questions could differentiate among various levels of enlistee BCT performance. This sub-study involved the following procedures.

- The establishment of a three-point BCT Success level criterion using the Trainee Performance Evaluation Form, which provided for assignment of enlistees into outstanding, satisfactory or unsatisfactory BCT performance groups.
- The stratification of enlistee samples controlled for post, ethnic group and BCT success level.
- The development of multiple half and composite keys.
- The correlation of key scores with the three level BCT success index.

As the tables which follow indicate, moderate relationships were found between EP and EEQ key scores and BCT success levels, despite the fact that the item content of both instruments was developed with just the attrition criterion in mind.

EP SCORES-BCT SUCCESS LEVEL CORRELATIONS

	Analysis Samples				
EP Key	Half 1 (N=1,106) r	Half 2 (N=1,106) r	Half 3 (N=1,105) r	Half 4 (N=1,107) r	Total EP (N=2,212) r
Half 1	.27	.24	.26	.25	.25
Half 2	.21	.33	.28	.26	.27
Half 3	.26	.29	.32	.23	.28
Half 4	.25	.26	.23	.28	.26
Halves 1-2	.26	.28	.27	.26	.27
Halves 3-4	.26	.27	.26	.27	.26
Halves 1-2-3-4	.25	.29	.26	.27	.27
AFQT Scores	.13	.12	.11	.15	.11

EEQ SCORES-BCT SUCCESS LEVEL CORRELATIONS

	Analysis Samples				
EEQ Key	Half 1 (N=1,133) r	Half 2 (N=1,136) r	Half 3 (N=1,134) r	Half 4 (N=1,135) r	Total EEQ (N=2,269) r
Half 1	.28	.18	.22	.25	.23
Half 2	.19	.25	.19	.25	.22
Half 3	.24	.23	.26	.22	.24
Half 4	.21	.22	.16	.27	.21
Halves 1-2	.21	.24	.20	.25	.22
Halves 3-4	.21	.23	.21	.24	.22
Halves 1-2-3-4	.20	.23	.20	.24	.22
Pre-Existing	.19	.17	.18	.18	.18
AFQT Scores	.11	.11	.09	.13	.11

EP SCORES-BLACK/WHITE COMPARISONS

EP Key	White Subgroup (N=1,382) M	SD	BCT Quality Level r	Black Subgroup (N=596) M	SD	BCT Quality Level r
Half 1	23.88	7.23	.27	24.81	5.79	.26
Half 2	28.62	7.67	.29	29.81	6.57	.27
Half 3	25.83	6.49	.29	26.74	5.30	.27
Half 4	19.62	6.68	.27	20.59	5.81	.27
Halves 1-2	25.73	8.09	.28	27.22	6.80	.26
Halves 3-4	24.80	8.49	.28	26.46	7.20	.27
Halves 1-2-3-4	25.44	8.28	.29	27.13	6.99	.26
AFQT Scores	60.18	19.68	.21	42.65	14.32	.06
BCT Success	2.11	.58	xx	2.24	.62	xx

EEQ SCORES-BLACK/WHITE COMPARISONS

EEQ Key	White Subgroup (N=1,540) M	SD	BCT Quality Level r	Black Subgroup (N=566) M	SD	BCT Quality Level r
Half 1	12.20	3.57	.27	11.96	3.25	.18
Half 2	14.51	4.04	.25	15.06	3.30	.17
Half 3	13.96	3.58	.25	14.43	3.17	.22
Half 4	17.46	5.19	.25	17.96	4.27	.17
Halves 1-2	12.79	4.74	.26	13.45	4.07	.17
Halves 3-4	12.17	4.61	.25	13.02	3.93	.18
Halves 1-2-3-4	11.00	4.59	.24	11.66	4.00	.18
Pre-Existing	30.23	3.25	.22	30.45	2.89	.11
AFQT Scores	59.26	19.24	.17	43.30	15.12	.06
BCT Success	2.12	.58	xx	2.22	.61	xx

APPENDIX G

INTERCORRELATIONS AMONG PRINCIPAL VARIABLES STUDIED

Variables		Intercorrelations*										
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
180-Day separated/not separated**	(1)	xx	3,170	3,170	295	3,164	977	2,107	2,112	2,112	2,182	2,182
BCT success index (3-level)	(2)	.77	xx	3,304	308	3,298	1,023	2,192	2,112	2,112	2,182	2,182
BCT drill instructor ratings-total score	(3)	.92	.81	xx	308	3,298	1,023	2,192	2,112	2,112	2,182	2,182
Peer ratings	(4)	.07	.39	.44	xx	308	302	308	230	230	295	295
AFQT score	(5)	.18	.11	.12	.12	xx	1,022	2,186	2,108	2,108	2,177	2,177
WEPS total score	(6)	-.02	.02	.01	.07	-.17	xx	1,022	375	375	975	975
WYO total score	(7)	.05	.02	.02	.02	.10	-.06	xx	1,067	1,067	2,101	2,101
EP key-Halves 1-2-3-4	(8)	.42	.25	.26	.22	.22	-.01	.01	xx	2,112	1,137	1,137
EP key-Total Sample Unit Weights	(9)	.42	.27	.27	.28	.24	.01	.04	.90	xx	1,137	1,137
EEQ key-Halves 1-2-3-4	(10)	.35	.19	.21	.17	.25	-.04	.02	.68	.66	xx	2,182
EEQ key-Total Sample-Unit Weights	(11)	.32	.19	.21	.21	.26	-.01	.03	.75	.76	.94	xx

* Matrix Below Diagonal (xx) Contains Correlation Coefficients - Matrix Above Diagonal Contains Sample Sizes Corresponding To Correlation Coefficients.

** All Correlations With This Variable Are Biserial.

APPENDIX H

EP-EEQ TEST-RETEST RELIABILITY

The procedural design of the Quality Selection Project included provision for administration of the four experimental questionnaires in selected District Recruiting Commands (DRC's) and Armed Forces Examining and Entrance Stations (AFEES), in addition to the two Reception Stations named in this report.

Given this design and the successive step nature of the Army's recruiting, examining, reception stages, a number of enlistees could be identified who had taken the Early Experience Questionnaire and the Enlistee Profile on two occasions - once during their AFEES processing and again several weeks later at their Reception Station. The existence of the "repeater" samples afforded the opportunity to compute the following test-retest correlations (Pearson product-moment) between the EEQ and EP scores the groups achieved at each administration on the 180-day EEQ and EP keys.

REPEATER SAMPLES, TEST-RETEST CORRELATIONS

QUESTIONNAIRE-KEY	N	AFEES SCORES/RECEP. STATION SCORES r
Early Experience Questionnaire (Halves 1-2-3-4 180-day Key)	139	.91
Enlistee Profile (Halves 1-2-3-4 180-day Key	134	.85

As the above results indicate, both the Early Experience Questionnaire and the Enlistee Profile key scores demonstrate high reliability between AFEES and Reception Station administrations. While other repeater combinations were observed (DRC-AFEES, DRC-Reception Stations), the size of these groups was insufficient to permit test-retest analysis.